



05-27 DT20 Rec'd PCT/PTO 23 MAY 2003
Attorney Pocket No.: 11145-023US1
PCT/Box #9
SEA

IN THE UNITED STATES RECEIVING OFFICE

Applicant : Leif Andersson et al. Art Unit : Unknown
Serial No. : 10/070,794 Examiner : Unknown
Filed : March 8, 2002
Title : VARIANTS OF THE GAMMA CHAIN OF AMPK, DNA SEQUENCES
ENCODING THE SAME, AND USES THEREOF

MAIL STOP PCT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER

The following correspondence relating to this application is enclosed:

1. Response to Notification of Defective Response (2 pages);
2. Copy of Notification of Defective Response (10 pages);
3. Verified Statement Under 37 CFR 1.821(f) (1 page);
4. Paper Copy of Sequence Listing (24 pages);
5. Computer Readable Diskette; and
6. Post card.

Please apply any charges not covered, or any credits, to Deposit Account No. 06-1050.

Respectfully submitted,

Date: _____

5/23/03

Monica McCormick Graham, Ph.D.

Reg. No. 42,600

Fish & Richardson P.C., P.A.
60 South Sixth Street, Suite 3300
Minneapolis, MN 55402
Telephone: (612) 335-5070
Facsimile: (612) 288-9696

60142847.doc

CERTIFICATE OF MAILING BY EXPRESS MAIL

Express Mail Label No. EV342626111US

May 23, 2003

Date of Deposit

MB



Attorney Pocket No.: 11145-023US1

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RESPONSE TO NOTIFICATION OF DEFECTIVE RESPONSE

In response to the communication dated April 29, 2003 (copy enclosed), Applicants submit herewith a Sequence Listing in computer readable form as required by 37 CFR §1.824. In addition, applicant submits substitute Sequence Listing as required under 37 CFR §1.823(a) and a statement under 37 CFR §1.821(f). In the substitute sequence listing, the <212> section recites "DNA" in place of "ADN." No new matter has been introduced.

Applicants respectfully request entry of the paper copy and computer readable copy of the Sequence Listing filed herewith for the instant application.

CERTIFICATE OF MAILING BY EXPRESS MAIL

Express Mail Label No. EV342626111US

May 23, 2003
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Applicant : Leif Andersson e
Serial No. : 10/070,794
Filed : March 8, 2002
Page : 2 of 2

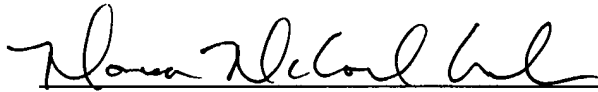
Attorney Packet No.: 11145-023US1

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Respectfully submitted,

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Reg. No. 42,600

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Minneapolis, MN 55402
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Facsimile: (612) 288-9696

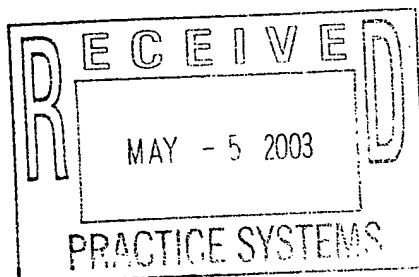
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HSE
LWG

UNITED STATES PATENT AND TRADEMARK OFFICE


 Commissioner for Patents, Box PCT
 United States Patent and Trademark Office
 Washington, D.C. 20231
 www.uspto.gov

U.S. APPLICATION NUMBER NO. 10/070,794	FIRST NAMED APPLICANT Leif Andersson	ATTY. DOCKET NO. 11145-023US1
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 Mark S Ellinger
 Fish & Richardson
 60 South Sixth Street
 Suite 3300
 Minneapolis, MN 55402


INTERNATIONAL APPLICATION NO. PCT/EP00/09896	
I.A. FILING DATE 09/11/2000	PRIORITY DATE

 CONFIRMATION NO. 9287
 371 FORMALITIES LETTER


OC00000009917456

Date Mailed: 04/29/2003

NOTIFICATION OF DEFECTIVE RESPONSE

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as an Elected Office (37 CFR 1.495):

- Indication of Small Entity Status
- Copy of the International Application filed on 03/08/2002
- Copy of the International Search Report filed on 03/08/2002
- Copy of IPE Report filed on 03/08/2002
- Preliminary Amendments filed on 03/08/2002
- Biochemical Sequence Diskette filed on 10/04/2002
- Oath or Declaration filed on 10/04/2002
- Biochemical Sequence Listing filed on 10/04/2002
- Small Entity Statement filed on 03/08/2002
- Copy of references cited in ISR filed on 03/08/2002
- U.S. Basic National Fees filed on 03/08/2002
- Priority Documents filed on 03/08/2002

 DOCUMENT NOT RECORDED
 ACTION: Seq. Listing
4-29-03
 EASR: 5-29-03
 DEPT. OF: 5-29-03
 INITIALS: [Signature]

Applicant's response filed 10/04/2002 is hereby acknowledged. The following requirements set forth in the NOTIFICATION of MISSING REQUIREMENTS mailed 06/04/2002 have not been completed.

The following items **MUST** be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

Applicant is required to complete the response within a time limit of **ONE MONTH** from the date of this Notification or within the time remaining in the response set forth in the Notification of Missing Requirements, whichever is the longer. No extension of this time limit may be granted under 37 CFR 1.136, but the period for response set in the Notification of Missing Requirements may be extended under 37 CFR 1.136(a).

The following items **MUST** be furnished within the period set forth below:

- The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with

Due Date:	5/29/03
Deadline:	5/29/03
Initials:	AS 5/6/03

the requirements for such a closure as set forth in 37 CFR 1.821 -1.825 the following reason(s):

- A copy of the "Sequence Listing" in computer readable form has been submitted. The content of the computer readable form, however, does not comply with the requirements of Annex C of the Administrative Instructions and 37 CFR 1.822 and/or 1.832, as indicated on the attached marked-up copy of the "Raw Sequence Listing."
- The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A substitute computer readable form must be submitted as required by 37 CFR 1.825(d).
- **APPLICANT MUST PROVIDE:**
 - An initial or substitute computer readable form (CRF) of the "Sequence Listing."
 - An initial or substitute paper copy or compact disc of the "Sequence Listing," as well as an amendment directing its entry into the specification.
- For questions regarding compliance to 37 CFR 1.821 -1.825 requirements, please contact:
 - For Rules Interpretation, call (703) 308 -4216
 - To Purchase PatentIn Software, call (703) 306 -2600
 - For PatentIn Software Program Help, call (703) 306 -4119 or e-mail at patin21help@uspto.gov or patin3help@uspto.gov

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

A copy of this notice MUST be returned with the response.

MAMIE P PERSON

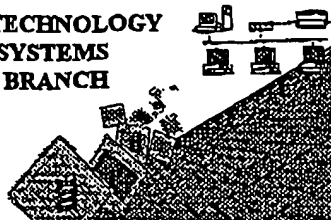
Telephone: (703) 305-3737

PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY. DOCKET NO.
10/070,794	PCT/EP00/09896	11145-023US1

RAW SEQUENCE LISTING ERROR REPORT

BIOTECHNOLOGY
SYSTEMS
BRANCH



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/070,794
Source: PCT/10
Date Processed by STIC: 4/3/2003

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN ASSISTANCE: e-mail: robert.wax@uspto.gov Telephone: 703-306-4119

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: U.S. Patent and Trademark Office, Box Sequence, P.O. Box 2327, Arlington, VA 22202
EFFECTIVE MAY 1, 2003 (via USPS): Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry directly to:
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7th Floor, Examiner Name, Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202
Or
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office, Box Sequence, Room 1B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Revised 04/01/2003



PCT

RAW SEQUENCE LISTING

DATE: 04/03/2003

PATENT APPLICATION: US/10/070,794

TIME: 14:10:35

Input Set : N:\vernette\10070794.raw.txt

Output Set: N:\CRF4\04032003\J070794.raw

4 <110> APPLICANT: ANDERSSON, Leif
 5 LOOFT, Christian
 6 KALM, Ernst
 7 MILAN, Denis
 8 ROBIC, Annie
 9 ROGEL-GAILLARD, Claire
 10 IANNUCELLI, Nathalie
 11 GELLIN, Joël
 12 LE ROY, Pascale
 13 CHARDON, Patrick
 15 <120> TITLE OF INVENTION: VARIANTS OF THE GAMMA CHAIN OF AMPK, DNA SEQUENCES ENCODING
 16 THE SAME, AND USES THEREOF
 18 <130> FILE REFERENCE: 11145-023US1
 20 <140> CURRENT APPLICATION NUMBER: US 10/070,794
 21 <141> CURRENT FILING DATE: 2002-10-04
 23 <150> PRIOR APPLICATION NUMBER: PCT/EP00/09896
 24 <151> PRIOR FILING DATE: 2000-09-11
 26 <150> PRIOR APPLICATION NUMBER: EP 00401388.4
 27 <151> PRIOR FILING DATE: 2000-05-18
 29 <150> PRIOR APPLICATION NUMBER: EP 99402236.3
 30 <151> PRIOR FILING DATE: 1999-09-10
 32 <160> NUMBER OF SEQ ID NOS: 42
 34 <170> SOFTWARE: FastSEQ for Windows Version 4.0

Does Not Comply
Corrected Diskette Needed

pp 1,3,6

ERRORED SEQUENCES

624 <210> SEQ ID NO: 27
 625 <211> LENGTH: 1873
 626 <212> TYPE: ADN DNA
 627 <213> ORGANISM: Sus scrofa
 629 <220> FEATURE:
 630 <221> NAME/KEY: CDS
 631 <222> LOCATION: (1)..(1395)
 633 <400> SEQUENCE: 27
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 635 Met Ser Phe Leu Glu Gln Gly Glu Ser Arg Ser Trp Pro Ser Arg Ala
 636 1 5 10 15
 638 gta acc acc agc tca gaa aga agc cat ggg gac cag ggg aac aag gcc 96
 639 Val Thr Thr Ser Ser Glu Arg Ser His Gly Asp Gln Gly Asn Lys Ala
 640 20 25 30
 642 tct aga tgg aca agg cag gag gat gta gag gaa ggg ggg cct ccg ggc 144
 643 Ser Arg Trp Thr Arg Gln Glu Asp Val Glu Glu Gly Gly Pro Pro Gly

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Input Set : N:\vernette\10070794.raw.txt

Output Set: N:\CRF4\04032003\J070794.raw

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646	ccg agg gaa ggt ccc cag tcc agg cca gtt gct gag tcc acc ggg cag	192		
647	Pro Arg Glu Gly Pro Gln Ser Arg Pro Val Ala Glu Ser Thr Gly Gln			
648	50 55 60			
650	gag gcc aca ttc ccc aag gcc aca ccc ttg gcc caa gcc gct ccc ttg	240		
651	Glu Ala Thr Phe Pro Lys Ala Thr Pro Leu Ala Gln Ala Ala Pro Leu			
652	65 70 75 80			
654	gcc gag gtg gac aac ccc cca aca gag cgg gac atc ctc ccc tct gac	288		
655	Ala Glu Val Asp Asn Pro Pro Thr Glu Arg Asp Ile Leu Pro Ser Asp			
656	85 90 95			
658	tgt gca gcc tca gcc tcc gac tcc aac aca gac cat ctg gat ctg ggc	336		
659	Cys Ala Ala Ser Ala Ser Asp Ser Asn Thr Asp His Leu Asp Leu Gly			
660	100 105 110			
662	ata gag ttc tca gcc tcg gcg gcg tcg ggg gat gag ctt ggg ctg gtg	384		
663	Ile Glu Phe Ser Ala Ser Ala Ala Ser Gly Asp Glu Leu Gly Leu Val			
664	115 120 125			
666	gaa gag aag cca gcc ccg tgc cca tcc cca gag gtg ctg tta ccc agg	432		
667	Glu Glu Lys Pro Ala Pro Cys Pro Ser Pro Glu Val Leu Leu Pro Arg			
668	130 135 140			
670	ctg ggc tgg gat gat gag ctg cag aag ccg ggg gcc cag gtc tac atg	480		
671	Leu Gly Trp Asp Asp Glu Leu Gln Lys Pro Gly Ala Gln Val Tyr Met			
672	145 150 155 160			
674	cac ttc atg cag gag cac acc tgc tac gat gcc atg gcg acc agc tcc	528		
675	His Phe Met Gln Glu His Thr Cys Tyr Asp Ala Met Ala Thr Ser Ser			
676	165 170 175			
678	aaa ctg gtc atc ttc gac acc atg ctg gag atc aag aag gcc ttc ttt	576		
679	Lys Leu Val Ile Phe Asp Thr Met Leu Glu Ile Lys Lys Ala Phe Phe			
680	180 185 190			
682	gcc ctg gtg gcc aac ggc gtc cga gcg gca cct ttg tgg gat agc aag	624		
683	Ala Leu Val Ala Asn Gly Val Arg Ala Ala Pro Leu Trp Asp Ser Lys			
684	195 200 205			
686	aag cag agc ttc gtg ggg atg ctg acc atc aca gac ttc atc ttg gtg	672		
687	Lys Gln Ser Phe Val Gly Met Leu Thr Ile Thr Asp Phe Ile Leu Val			
688	210 215 220			
690	ctg cac cgc tat tac agg tcc ccc ctg gtc cag atc tac gag att gaa	720		
691	Leu His Arg Tyr Tyr Arg Ser Pro Leu Val Gln Ile Tyr Glu Ile Glu			
692	225 230 235 240			
694	gaa cat aag att gag acc tgg agg gag atc tac ctt caa ggc tgc ttc	768		
695	Glu His Lys Ile Glu Thr Trp Arg Glu Ile Tyr Leu Gln Gly Cys Phe			
696	245 250 255			
698	aag cct ctg gtc tcc atc tct ccc aat gac agc ctg ttc gaa gct gtc	816		
699	Lys Pro Leu Val Ser Ile Ser Pro Asn Asp Ser Leu Phe Glu Ala Val			
700	260 265 270			
702	tac gcc ctc atc aag aac cgg atc cac cgc ctg ccg gtc ctg gac cct	864		
703	Tyr Ala Leu Ile Lys Asn Arg Ile His Arg Leu Pro Val Leu Asp Pro			
704	275 280 285			
706	gtc tcc ggg gct gtg ctc cac atc ctc aca cat aag cgg ctt ctc aag	912		
707	Val Ser Gly Ala Val Leu His Ile Leu Thr His Lys Arg Leu Leu Lys			
708	290 295 300			

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DATE: 04/03/2003

PATENT APPLICATION: US/10/070,794

TIME: 14:10:35

Input Set : N:\vernette\10070794.raw.txt

Output Set: N:\CRF4\04032003\J070794.raw

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710 ttc ctg cac atc ttt ggc acc ctg ctg ccc cgg ccc tcc ttc ctc tac 960
711 Phe Leu His Ile Phe Gly Thr Leu Leu Pro Arg Pro Ser Phe Leu Tyr
712 305 310 315 320
714 cgc acc atc caa gat ttg ggc atc ggc aca ttc cga gac ttg gcc gtg 1008
715 Arg Thr Ile Gln Asp Leu Gly Ile Gly Thr Phe Arg Asp Leu Ala Val
716 325 330 335
718 gtg ctg gaa acg gcg ccc atc ctg acc gca ctg gac atc ttc gtg gac 1056
719 Val Leu Glu Thr Ala Pro Ile Leu Thr Ala Leu Asp Ile Phe Val Asp
720 340 345 350
722 cgg cgt gtg tct gcg ctg cct gtg gtc aac gaa act gga cag gta gtg 1104
723 Arg Arg Val Ser Ala Leu Pro Val Val Asn Glu Thr Gly Gln Val Val
724 355 360 365
726 ggc ctc tac tct cgc ttt gat gtg atc cac ctg gct gcc caa caa aca 1152
727 Gly Leu Tyr Ser Arg Phe Asp Val Ile His Leu Ala Ala Gln Gln Thr
728 370 375 380
730 tac aac cac ctg gac atg aat gtg gga gaa gcc ctg agg cag cgg aca 1200
731 Tyr Asn His Leu Asp Met Asn Val Gly Glu Ala Leu Arg Gln Arg Thr
732 385 390 395 400
734 ctg tgt ctg gaa ggc gtc ctt tcc tgc cag ccc cac gag acc ttg ggg 1248
735 Leu Cys Leu Glu Gly Val Leu Ser Cys Gln Pro His Glu Thr Leu Gly
736 405 410 415
739 gaa gtc att gac cgg att gtc cgg gaa cag gtg cac cgc ctg gtg ctc 1296
740 Glu Val Ile Asp Arg Ile Val Arg Glu Gln Val His Arg Leu Val Leu
741 420 425 430
744 gtg gat gag acc cag cac ctt ctg ggc gtg gtg tcc ctc tct gac atc 1344
745 Val Asp Glu Thr Gln His Leu Leu Gly Val Val Ser Leu Ser Asp Ile
746 435 440 445
748 ctt cag gct ctg gtg ctc agc cct gct gga att gat gcc ctc ggg gcc 1392
749 Leu Gln Ala Leu Val Leu Ser Pro Ala Gly Ile Asp Ala Leu Gly Ala
750 450 455 460
752 tga gaaccttggg acctttgtct tcaggccacc tggcacacct ggaagccagt 1445
754 465
756 gaagggagcc gtggactcag ctctcacttc cctcagccc cacttgctgg tctggctctt 1505
758 gttcaggtag gctccgccc gggcccctgg cctcagcatc agcccctcag tctccctggg 1565
760 caccagatc tcagactggg gcaccctgaa gatgggagtg gccagctta tagctgagca 1625
762 gccttgtaga atctaccagc atcaagactc actgtgggac cactgctttg tccattctc 1685
764 agctgaaatg atggagggcc tcataagagg ggtggacagg gcctggagta gaggccagat 1745
766 cagtgcctg ccttcaggac ctccggggag ttagagctgc cctctctcag ttcagttccc 1805
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840 <211> LENGTH: 2115
841 <212> TYPE: ADN DNA
842 <213> ORGANISM: Homo sapiens
844 <220> FEATURE:
845 <221> NAME/KEY: CDS
846 <222> LOCATION: (1)..(1395)
848 <400> SEQUENCE: 29
849 atg agc ttc cta gag caa gaa aac agc agc tca tgg cca tca cca gct 48

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Output Set: N:\CRF4\04032003\J070794.raw

850	Met	Ser	Phe	Leu	Glu	Gln	Glu	Asn	Ser	Ser	Ser	Trp	Pro	Ser	Pro	Ala	
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853	gtg	acc	agc	agc	tca	gaa	aga	atc	cgt	ggg	aaa	cgg	agg	gcc	aaa	gcc	96
854	Val	Thr	Ser	Ser	Ser	Glu	Arg	Ile	Arg	Gly	Lys	Arg	Arg	Ala	Lys	Ala	
855				20					25					30			
858	ttg	aga	tgg	aca	agg	cag	aag	tcg	gtg	gag	gaa	ggg	gag	cca	cca	ggt	144
859	Leu	Arg	Trp	Thr	Arg	Gln	Lys	Ser	Val	Glu	Glu	Gly	Glu	Pro	Pro	Gly	
860			35					40						45			
862	cag	ggg	gaa	ggt	ccc	cgg	tcc	agg	cca	act	gct	gag	tcc	acc	ggg	ctg	192
863	Gln	Gly	Glu	Gly	Pro	Arg	Ser	Arg	Pro	Thr	Ala	Glu	Ser	Thr	Gly	Leu	
864		50					55					60					
866	gag	gcc	aca	ttc	ccc	aag	acc	aca	ccc	ttg	gct	caa	gct	gat	cct	gcc	240
867	Glu	Ala	Thr	Phe	Pro	Lys	Thr	Thr	Pro	Leu	Ala	Gln	Ala	Asp	Pro	Ala	
868	65					70					75					80	
870	ggg	gtg	ggc	act	cca	cca	aca	ggg	tgg	gac	tgc	ctc	ccc	tct	gac	tgt	288
871	Gly	Val	Gly	Thr	Pro	Pro	Thr	Gly	Trp	Asp	Cys	Leu	Pro	Ser	Asp	Cys	
872				85					90					95			
874	aca	gcc	tca	gct	gca	ggc	tcc	agc	aca	gat	gat	gtg	gag	ctg	gcc	acg	336
875	Thr	Ala	Ser	Ala	Ala	Gly	Ser	Ser	Thr	Asp	Asp	Val	Glu	Leu	Ala	Thr	
876				100					105					110			
878	gag	ttc	cca	gcc	aca	gag	gcc	tgg	gag	tgt	gag	cta	gaa	ggc	ctg	ctg	384
879	Glu	Phe	Pro	Ala	Thr	Glu	Ala	Trp	Glu	Cys	Glu	Leu	Glu	Gly	Leu	Leu	
880			115					120					125				
882	gaa	gag	agg	cct	gcc	ctg	tgc	ctg	tcc	ccg	cag	gcc	cca	ttt	ccc	aag	432
883	Glu	Glu	Arg	Pro	Ala	Leu	Cys	Leu	Ser	Pro	Gln	Ala	Pro	Phe	Pro	Lys	
884		130					135					140					
886	ctg	ggc	tgg	gat	gac	gaa	ctg	cgg	aaa	ccc	ggc	gcc	cag	atc	tac	atg	480
887	Leu	Gly	Trp	Asp	Asp	Glu	Leu	Arg	Lys	Pro	Gly	Ala	Gln	Ile	Tyr	Met	
888	145					150					155					160	
890	cgc	ttc	atg	cag	gag	cac	acc	tgc	tac	gat	gcc	atg	gca	act	agc	tcc	528
891	Arg	Phe	Met	Gln	Glu	His	Thr	Cys	Tyr	Asp	Ala	Met	Ala	Thr	Ser	Ser	
892				165					170					175			
894	aag	cta	gtc	atc	ttc	gac	acc	atg	ctg	gag	atc	aag	aag	gcc	ttc	ttt	576
895	Lys	Leu	Val	Ile	Phe	Asp	Thr	Met	Leu	Glu	Ile	Lys	Lys	Ala	Phe	Phe	
896				180					185					190			
898	gct	ctg	gtg	gcc	aac	ggt	gtg	cgg	gca	gcc	cct	cta	tgg	gac	agc	aag	624
899	Ala	Leu	Val	Ala	Asn	Gly	Val	Arg	Ala	Ala	Pro	Leu	Trp	Asp	Ser	Lys	
900			195					200					205				
902	aag	cag	agc	ttt	gtg	ggg	atg	ctg	acc	atc	act	gac	ttc	atc	ctg	gtg	672
903	Lys	Gln	Ser	Phe	Val	Gly	Met	Leu	Thr	Ile	Thr	Asp	Phe	Ile	Leu	Val	
904		210					215					220					
906	ctg	cat	cgc	tac	tac	agg	tcc	ccc	ctg	gtc	cag	atc	tat	gag	att	gaa	720
907	Leu	His	Arg	Tyr	Tyr	Arg	Ser	Pro	Leu	Val	Gln	Ile	Tyr	Glu	Ile	Glu	
908	225					230					235					240	
910	caa	cat	aag	att	gag	acc	tgg	agg	gag	atc	tac	ctg	caa	ggc	tgc	ttc	768
911	Gln	His	Lys	Ile	Glu	Thr	Trp	Arg	Glu	Ile	Tyr	Leu	Gln	Gly	Cys	Phe	
912				245					250						255		
915	aag	cct	ctg	gtc	tcc	atc	tct	cct	aat	gat	agc	ctg	ttt	gaa	gct	gtc	816
916	Lys	Pro	Leu	Val	Ser	Ile	Ser	Pro	Asn	Asp	Ser	Leu	Phe	Glu	Ala	Val	

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/070,794

DATE: 04/03/2003

TIME: 14:10:35

Input Set : N:\vernette\10070794.raw.txt

Output Set: N:\CRF4\04032003\J070794.raw

```

917          260          265          270
919 tac acc ctc atc aag aac cgg atc cat cgc ctg cct gtt ctt gac ccg      864
920 Tyr Thr Leu Ile Lys Asn Arg Ile His Arg Leu Pro Val Leu Asp Pro
921          275          280          285
923 gtg tca ggc aac gta ctc cac atc ctc aca cac aaa cgc ctg ctc aag      912
924 Val Ser Gly Asn Val Leu His Ile Leu Thr His Lys Arg Leu Leu Lys
925          290          295          300
927 ttc ctg cac atc ttt ggt tcc ctg ctg ccc cgg ccc tcc ttc ctc tac      960
928 Phe Leu His Ile Phe Gly Ser Leu Leu Pro Arg Pro Ser Phe Leu Tyr
929 305          310          315          320
931 cgc act atc caa gat ttg ggc atc ggc aca ttc cga gac ttg gct gtg      1008
932 Arg Thr Ile Gln Asp Leu Gly Ile Gly Thr Phe Arg Asp Leu Ala Val
933          325          330          335
935 gtg ctg gag acc gca ccc atc ctg act gca ctg gac atc ttt gtg gac      1056
936 Val Leu Glu Thr Ala Pro Ile Leu Thr Ala Leu Asp Ile Phe Val Asp
937          340          345          350
939 cgg cgt gtg tct gca ctg cct gtg gtc aac gaa tgt ggt cag gtc gtg      1104
940 Arg Arg Val Ser Ala Leu Pro Val Val Asn Glu Cys Gly Gln Val Val
941          355          360          365
943 ggc ctc tat tcc cgc ttt gat gtg att cac ctg gct gcc cag caa acc      1152
944 Gly Leu Tyr Ser Arg Phe Asp Val Ile His Leu Ala Ala Gln Gln Thr
945          370          375          380
947 tac aac cac ctg gac atg agt gtg gga gaa gcc ctg agg cag agg aca      1200
948 Tyr Asn His Leu Asp Met Ser Val Gly Glu Ala Leu Arg Gln Arg Thr
949 385          390          395          400
951 cta tgt ctg gag gga gtc ctt tcc tgc cag ccc cac gag agc ttg ggg      1248
952 Leu Cys Leu Glu Gly Val Leu Ser Cys Gln Pro His Glu Ser Leu Gly
953          405          410          415
955 gaa gtg atc gac agg att gct cgg gag cag gta cac agg ctg gtg cta      1296
956 Glu Val Ile Asp Arg Ile Ala Arg Glu Gln Val His Arg Leu Val Leu
957          420          425          430
959 gtg gac gag acc cag cat ctc ttg ggc gtg gtc tcc ctc tcc gac atc      1344
960 Val Asp Glu Thr Gln His Leu Leu Gly Val Val Ser Leu Ser Asp Ile
961          435          440          445
963 ctt cag gca ctg gtg ctc agc cct gct ggc atc gat gcc ctc ggg gcc      1392
964 Leu Gln Ala Leu Val Leu Ser Pro Ala Gly Ile Asp Ala Leu Gly Ala
965          450          455          460
967 tga gaagatctga gtcctcaatc ccaagccaac tgcacactgg aagccaatga      1445
969 465
972 aggaattgag aacagcttca tttccccaac cccaatttgc tggttcagct atgattcagg 1505
974 cttcttcagc cttccaaaat tgccctttgcc ttacttgtgc tcccagaacc cttcgggcat 1565
976 gccagtgca ccatgggatg atgaaattaa ggagaacagc tgagtcaagc ttggaggctc 1625
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988 gagtctccc tccattcttg tccagaaaac tccttagctc tcgcagtgag ccatgttctt 1985
990 agtctccagg gatggatggc cttgtatatg gacccttgag aatgagcaat tgagaaaaca 2045

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RAW SEQUENCE LISTING

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992 aaacaaaagg aacaatccat gaacttagat tttattggtt tcaactaaaa tgctgcagtc 2105
994 atttgacctg                                     2115
1063 <210> SEQ ID NO: 31
1064 <211> LENGTH: 2022
1065 <212> TYPE: ADN DNA
1066 <213> ORGANISM: Sus scrofa
<K-> 1068 <400> SEQUENCE: 31
1069 atggagcttg ccgagctaga gcaggcactg cgcagggtcc cgggggtccc ggggggctgg 60
1070 gagctggagc aactgaggcc agagggcgaga gggcccacca ctgcggatac tccctcctgg 120
1071 agcagcctcg ggggacctaa gcatcaagag atgagcttcc tagagcaagg agagagccgt 180
1072 tcatggccat cccgagctgt aaccaccagc tcagaaagaa gccatgggga ccaggggaac 240
1073 aaggcctcta gatggacaag gcaggaggat gtagaggaag gggggcctcc gggcccagag 300
1074 gaaggctccc agtccaggcc agttgctgag tccaccgggc aggaggccac attccccaag 360
1075 gccacaccct tggcccaagc cgtcccttg gccgaggtgg acaaccccc aacagagcgg 420
1076 gacatcctcc cctctgactg tgcagcctca gccctcgact ccaacacaga ccattctggat 480
1077 ctgggcatag agttctcagc ctccggggcg tcgggggatg agcttgggct ggtggaagag 540
1078 aagccagccc cgtgccatc cccagagggt ctgttaccca ggctgggctg ggatgatgag 600
1079 ctgcagaagc cgggggcccc ggtctacatg cacttcatgc aggagcacac ctgctacgat 660
1080 gccatggcga ccagctccaa actggtcatc ttgcacacca tgctggagat caagaaggcc 720
1081 ttctttgccc tgggtggccaa cggcgtccga gcggcacctt tgtgggacag caagaagcag 780
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1099 gactcactgt gggaccactg ctttgtccca ttctcagctg aaatgatgga gggcctcata 1860
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VERIFICATION SUMMARY

PATENT APPLICATION: US/10/070,794

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Input Set : N:\vernette\10070794.raw.txt

Output Set: N:\CRF4\04032003\J070794.raw

L:21 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:633 M:310 E: (3) Wrong or Missing Sequence Type, TYPE:

L:848 M:310 E: (3) Wrong or Missing Sequence Type, TYPE:

L:1068 M:310 E: (3) Wrong or Missing Sequence Type, TYPE: